

In the Specification

Please replace the paragraph beginning at page 8, line 11, with the following paragraph:

--Fig. 4 and Fig. 4A are two flow charts which provide an overview of the operations performed by a client process and a server process in creating and establishing a connection for file system backup or restore.--

[Please replace the paragraph beginning at page 8, line 14, with the following paragraph:]

--Fig. 5 and Fig. 5A are two flow charts which provide an overview of the operations performed by a client process and a server process in creating and establishing a connection for file system backup or restore.--

Please replace the paragraph beginning at page 14, line 4, with the following paragraph:

--Computer 12 which contains the server process 11 of the backup and restore application. The server process 11 includes other software modules. Included with the server process are three other software modules. In order to allow the server process 11 to facilitate a communication over the network 18 to the client process 11A, a communication mechanism 58 must be used. As in earlier network based backup and restore software applications, the preferred communication mechanism is sockets and, particularly TCP/IP sockets used to create and establish a communication to the client process 11A. Also in the server process 11 is a second communications mechanism shown at 60. In the preferred embodiment of the invention, sockets are used as a communication mechanism to facilitate communications from the server or client processes 11 and 11A through the data storage system 14 to the client or server processes 11A and 11. In the preferred embodiment of the invention, the sockets 60 are STP (Symmetrix Transport Protocol) or SSLsockets, as further described in EMC Corporation's, assignee of the present application, pending patent application entitled "Communication Mechanism and Method for Easily Transferring Information Between Processes" filed on September 29, 1997, having serial number 08/939,772. The manner in which communications and data are transferred through the data storage system 14

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with the use of communication mechanism 60 is further described in EMC Corporation's pending patent application entitled "Method and Apparatus for Transfers Employed in a Data Storage System" filed on December 30, 1997, and having serial number 09/000,540. Lastly, included in the server process 11 is a layer of software termed STP or SSLConnect, in the preferred embodiment of the invention, and shown at 54. In the preferred embodiment of the invention, this software allows the server process 11 to determine the mode or type of a particular socket call. For example, if the socket call is a normal or typical TCP/IP socket call it will process that socket call as a "normal" socket request, and use the created socket communication mechanism 58 to create and/or facilitate communications over the network 18. If however, the socket call is one specially designed for use with the data storage system 14, the STP or SSLConnect software will determine that the particular type or mode of that socket call is a socket call specially designed for data storage system 14, and will process that request as a socket call specially utilized for data storage system 14. Thus, the server process 11 will use the socket communication mechanism 60 to create and/or facilitate communications through the data storage system 14.--

Please replace the paragraph beginning at page 17, line 11, with the following paragraph:

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--Figs. 4, 4A, 5, and 5A are of flow charts designed to show how communication over the network is used to establish a one connection, while a connection is being established through the data storage system. Figs. 4 and 4A show how a file system application sets up connection over both the network and the data storage system. Fig. 4 is representative of communication which would occur in a prior art network backup or restore operation. However the present invention uses the scheme shown in Fig. 4 combined with the one shown in Fig. 4A. Figs. 5 and 5A show how a database application establishes a connection over the network to establish a connection through the data storage system.--

Please replace the paragraph beginning at page 19, line 4, with the following paragraph:

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-- At step 112, the client process creates a socket, in a similar manner as done at step 82. Since a socket is but a communication mechanism, each process requires a

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socket in order to communicate with another process. Next that socket is bound to the WKP at step 114. At step 115, the listen command is used to define the queue of pending connection requests. At step 118, the client process is ready to accept the connection request done by the server at step 86. Once the server process becomes aware that the client process has accepted the connection request, the server process sends over a well known string or a string of zeros, as shown in step 90, to make certain that the server process is connected to the client process on the same to WKP. The client process receives the string of zeros at step 120. At this point the client process knows it is connected to the server process on the WKP. The client process also knows that another connection request should be coming. In other words, when the backup operation is initially configured by the user, the relevant configuration file has instructed the client process that there will be two connections in order to perform the backup or the restore. By receipt of the string of zeros, the client process recognizes that the first connection has occurred. Once the client process recognizes that the first connection has occurred, it needs to begin the process for establishing the second connection. At step 122, the client process does this by sending to the server process the file descriptor of the currently accepted socket. The currently accepted socket is the connected socket which was begun at step 82. This file descriptor is sent to the server process at step 122. The server process receives the file descriptor at step 92.--

Please replace the paragraph beginning at page 23, line 3, with the following paragraph:

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Now turning to Figs. 5 and 5A, the establishment of the relevant connections for database backup or restore operation is shown. Once again only the term backup operation will be used. This differs from the process used to establish a backup for a file system in a couple of different ways. First, in a database backup, the client process initiates the communication. Second, although a connection through the network is initially used, in the final analysis all the necessary communications for the database backup operation can occur through the data storage system. It should be understood that in essence, the network communication is initially established in order set up a connection through the data storage system.
